

WHAT IS CLAIMED IS:

1. A method for producing an assembly of microcomponents, said method comprising:
fabricating at least two microcomponents having a separation space therebetween; and
extending an extension member of at least one of said at least two microcomponents
5 to reduce said separation space therebetween.
2. The method of claim 1 wherein said separation space is no less than the minimum feature size required by a process utilized for said fabricating.
3. The method of claim 1 wherein said extending eliminates said separation space between said at least two microcomponents.
4. The method of claim 3 wherein said extension member of said at least one of said at least two microcomponents is capable of imparting movement to the other of said at least two microcomponents.
5. The method of claim 4 wherein said extension member is coupled to an actuator operable to generate movement of said extension member.
6. The method of claim 1 wherein said extending is achieved without removing either of said at least two microcomponents from a substrate on which they were fabricated.

7. The method of claim 1 wherein said extending enables reduction in said separation space with no power applied to said at least two microcomponents.

8. The method of claim 7 wherein said extending enables engagement of said extension member of said at least one of said at least two microcomponents with the other of said at least two microcomponents with no power applied to said at least two microcomponents.

9. The method of claim 1 further comprising:
latching said extension member once it is extended to a desired position.

10. The method of claim 9 wherein said latching comprises engaging a notch included on said extension member with a member that is positionally fixed relative to said extension member.

11. The method of claim 10 wherein the positionally fixed member comprises an arm having a barbed end arranged to engage said notch.

12. The method of claim 11 wherein said arm acts as a spring that is caused to compress as said extension member is extended and said arm relaxes toward its biased position as said barbed end engages said notch.

13. The method of claim 1 wherein said extending further comprises:
applying sufficient force to said extension member to impart motion thereto to move said extension member away from said at least one of said at least two microcomponents.

14. A method for reducing separation between microcomponents, said separation being present upon the result of fabrication of said microcomponents, said method comprising:

5 fabricating at least a first microcomponent and at least one other microcomponent being arranged on a substrate with said separation therebetween, wherein said at least a first microcomponent includes an extension member;

engaging an extension member of at least a first microcomponent; and

applying force to said extension member to movably extend said extension member toward said at least one other microcomponent to reduce said separation therebetween.

15. The method of claim 14 wherein said separation is no less than the minimum feature size required by a process utilized for said fabricating.

16. The method of claim 14 wherein said applying force to said extension member causes said extension member to movably extend toward said at least one other microcomponent to eliminate said separation therebetween.

17. The method of claim 14 wherein said applying force to said extension member causes said extension member to movably extend toward said at least one other microcomponent without removing said extension member from said substrate.

18. The method of claim 14 wherein said applying a force to said extension member causes said extension member to extend toward said at least one other microcomponent to reduce said separation therebetween with no power applied to the microcomponents.

19. The method of claim 14 further comprising:

latching said extension member once it is extended to a desired position.

20. The method of claim 19 wherein said latching comprises engaging a notch included on said extension member with a member that is positionally fixed relative to said extension member.

21. The method of claim 20 wherein the positionally fixed member comprises an arm having a barbed end arranged to engage said notch.

22. The method of claim 21 wherein said arm acts as a spring that is caused to compress as said extension member is extended and said arm relaxes toward its biased position as said barbed end engages said notch.

23. An assembly of microcomponents comprising:

at least two microcomponents fabricated with a separation distance therebetween; and

at least one of said at least two microcomponents including an extension part
comprising an extension member that is movably extendable toward the other of said at least
5 two microcomponents to reduce said separation distance therebetween.

24. The assembly of claim 23 wherein a separation of at least said separation
distance is required between said at least two microcomponents during fabrication of said at
least two microcomponents.

25. The assembly of claim 23 wherein said extension member is movably
extendable to reduce said separation distance without being removed from a substrate on
which said at least two microcomponents were fabricated.

26. The assembly of claim 23 wherein said extension member is movably
extendable to eliminate said separation distance.

27. The assembly of claim 23 wherein said extension member is movably
extendable to reduce said separation distance in a manner that requires no electrical power.

28. The assembly of claim 23 wherein said at least one of said at least two
microcomponents further comprises:

latching mechanism to latch said extension member once it is extended to a desired
position.

29. The assembly of claim 28 wherein said latching mechanism comprises:
at least one notch and at least one engaging member arranged to engage said at least one notch.

30. The assembly of claim 29 wherein said at least one notch is included on said extension member, and wherein said at least one engaging member is included on at least one arm that is positionally fixed relative to said extension member.

31. The assembly of claim 23 wherein said assembly is insensitive to etching inaccuracy encountered in a process utilized to fabricate said microcomponents.

32. The assembly of claim 31 wherein said extension part comprises features arranged such that said extension part compensates for said etching inaccuracy.

33. The assembly of claim 32 wherein said extension part compensates for said etching inaccuracy in a manner that results in said extension member being movably extendable to reduce said separation space to provide separation distance consistent with separation distance that would be recognized if said etching inaccuracy were not present.

34. The assembly of claim 31 wherein said etching inaccuracy includes inaccuracy selected from the group consisting of: over-etching and under-etching.

35. The assembly of claim 23 wherein said assembly comprises an assembly selected from the group consisting of:

linear stepper, rotational stepper, and planetary bearing.

36. The assembly of claim 23 wherein at least one of said at least two microcomponents is totally released from a substrate.

37. The assembly of claim 36 wherein positional accuracy of said totally released microcomponent is maintained at least in part by said extension part.

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